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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/743,086

12/23/2003

Mitsunobu Yoshida

247091US2SRD

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05/30/2008

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ALEXANDRIA, VA 22314

EXAMINER

PATEL, SHAMBHAVI K

ART UNIT

PAPER NUMBER

2128

NOTIFICATION DATE

DELIVERY MODE

05/30/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/743,086	Applicant(s) YOSHIDA ET AL.	
	Examiner SHAMBHAVI PATEL	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/27/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the Arguments/Amendments filed 01 February 2008.
2. Claims 1, 3-5 and 7-8 have been presented for examination.

Response to Arguments

3. The 35 U.S.C. 112 rejections are withdrawn in view of Applicant's amendments.
4. Applicant's arguments with respect to the prior art rejection are not persuasive. **Applicant submits**, on page 12 of the remarks, that Liu does not disclose "event control program which calls a function of activating or deactivating the continuous system equations when the first event is occurred, and calls the additional process when the second event is occurred." **Examiner notes** that the Liu reference discloses this feature in **section 4**. Predictable events (**section 4.1**) and non-predictable events (**section 4.2**) result in a breakpoint (i.e. deactivation) while nondeterministic event monitoring (**section 4.3**) ensures discrete state transitions (i.e. additional process) occur.

Information Disclosure Statement

5. The information disclosure statement filed 27 September 2008 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claim 1, 3-5 and 7-8 are rejected under 35 U.S.C. 102(b)** as being clearly anticipated by **Liu ("A Hierarchical Hybrid System Model and Its Simulation", 1999)**.

Regarding claims 1 and 5:

Liu discloses a simulation method of simulating a behavior of a mechanism to be simulated along a time axis on the basis of description data using a hybrid model, comprising:

- a. parsing a source program of a hybrid model of the mechanical device, the source program including **(Introduction)**:
- b. a first source code defining a hybrid model language occurrences of first and second events **(sections 4.1 and 4.2: predictable and non-predictable events)**
- c. a second source code defining in the hybrid model language continuous system equations **(section 2.2 “ ‘open’ continuous subsystem with the form of a set of ordinary differential equations”)** that are activated or deactivated upon occurrences of the first event **(sections 4.1 and 4.2: events results in breakpoints)**
- d. a third source code defining an additional process which is called when the second event is occurred **(section 4.3 state transitions)**
- e. generating from the second source code a fourth source code of a model equation registration program which converts data structures of all the continuous system equations into tree structures as internal data representations **(section 2: “hierarchical automata modeling” the system is expressed as a hierarchical (i.e. tree) organization of executable entities that are simulated)**
- f. generating from the first source code a fifth source code of an event control program which calls a function of activating or deactivating the continuous system equations when the first event is occurred **(sections 4.1 and 4.2: events results in breakpoints)**, and calls the additional process when the second event is occurred **(section 4.3: when appropriate events occur there is a discrete state transition)**
- g. from the third source code a sixth source code of additional processing program which is called in the event control program **(section 4.3 state transitions)**
- h. executing a model equation registration program based on the fourth source code **(section 2: “hierarchical automata modeling” the system is expressed as a hierarchical (i.e. tree) organization of executable entities that are simulated)**

- i. executing the simulation to output data that expresses the behavior of the mechanism (**section 5 steps 1-4**), wherein the activated one of the continuous system equations is solved by numerical integration along the time axis according to the converted data structure (**sections 3 and 3.1**)
- j. executing an additional program based on the sixth source code, wherein a control signal including the data is exchanged to/from the mechanism control software (**“Introduction”: 4th paragraph; section 6.3**)

Regarding claim 5, the simulation of the prior art is run through the Ptolemy II software (**abstract**).

Regarding claims 3 and 7:

Liu discloses the method according to claim 1, further comprising: exchanging a control signal with an external system through an input/output port in accordance with the additional processing program, the external system including a mechanism control software system that control the mechanism (**“Introduction”: 4th paragraph; section 6.3**)

Regarding claims 4 and 8:

Liu discloses the method according to claim 1, wherein the first event contains an evaluation result of internal variables of the mechanism (**section 5 steps 1-4**).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. **Examiner's Remarks:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shambhavi Patel whose telephone number is (571) 272-5877. The examiner can normally be reached on Monday-Friday, 8:00 am – 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2128

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kamini S Shah/

Supervisory Patent Examiner, Art Unit 2128

SKP